

WEG-8

No I assigned

Gloucester-Hinckley stvs1, rolling	Quonset, gsl
Gloucester-Hinckley stvs1, hilly	Quonset, gsl, rolling
Hinckley gsl	Rock outcrop-Canton complex
Hinckley gsl, rolling	Rumney fs1
Hinckley gsl, hilly	Scarboro mks1
Ipswich, peat	Scio stvsil
Lippitt gsl, rv	Stissing sil
Mansfield mksil	Stissing stvsil
Mansfield stvmksil	Sutton stvfs1
Matunuck mkpt	Sutton stxfs1
Merrimac-Urban land complex	Walpole sl
Narragansett stvsil	Wapping stvsil
Narragansett stxsil	Wapping stxsil
Newport stvsil	Woodbridge stvfs1
Newport stxsil	Woodbridge stxfs1
Newport-Urban land complex	



KEY

MODIFIER

mk = mucky  
r = rocky  
rv = very rocky  
rx = extremely rocky  
st = stony  
stv = very stony  
stx = extremely stony

TEXTURE

C = Clay  
fsl = fine sandy loam  
G = Gravel  
gls = gravelly loamy sand  
gs1 = gravelly sandy loam  
l = loam  
lcos = loamy coarse sand  
lfs = loamy fine sand  
ls = loamy sand  
pt = peat  
S = Sand  
sil = sil loam  
sl = sandy loam  
vfs1 = very fine sandy loam

TABLE 3 Prevailing wind erosion direction and preponderance of wind erosion forces in prevailing wind erosion direction for selected locations.

<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
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Hartford, Connecticut

315	315	315	338	0	180	180	180	180	0	315	315
1.8	1.8	1.5	2.0	1.5	1.6	1.4	1.5	1.8	1.4	1.3	1.6

Windsor Locks, Connecticut

315	315	337	315	180	180	180	180	0	315	337	315
1.8	4.6	1.3	1.9	2.1	2.0	1.6	1.7	1.7	1.5	1.9	2.0

Quonset Point, Rhode Island

NNW	SSW	NE	NNE	WNW
0	202	202	0	22
1.6	1.3	1.5	2.0	338

KEY

<u>Degrees</u>	<u>Direction</u>
0	North
45	Northeast
90	East
135	Southeast
180	South
225	Southwest
270	West
315	Northwest
360	North

Table 4 . - Prevailing Wind Direction Factors

(Multiply perpendicular field or strip width times the wind direction factor to obtain distance along the prevailing wind direction)

Aspect Ratio	Wind Angle:														
	Degrees of deviation of prevailing wind direction from perpendicular to the field or strip border or barrier 1/														
	0	5	10	15	20	25	30	35	40	45	50	60	70	80	90
1.0	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
1.2	1.55	1.58	1.62	1.65	1.69	1.73	1.77	1.80	1.84	1.88	1.93	1.97	2.00	2.03	2.07
1.4	1.39	1.43	1.47	1.51	1.55	1.59	1.64	1.71	1.79	1.87	1.95	2.05	2.15	2.25	2.35
1.6	1.29	1.34	1.39	1.43	1.46	1.51	1.56	1.65	1.75	1.86	1.97	2.14	2.31	2.48	2.65
1.8	1.22	1.28	1.33	1.37	1.40	1.44	1.49	1.60	1.71	1.86	2.01	2.26	2.52	2.78	3.03
2.0	1.18	1.24	1.29	1.32	1.35	1.40	1.44	1.56	1.68	1.86	2.04	2.42	2.78	3.16	3.52
2.2	1.16	1.21	1.26	1.29	1.33	1.37	1.41	1.54	1.67	1.87	2.07	2.57	3.08	3.58	4.08
2.4	1.13	1.19	1.24	1.28	1.31	1.36	1.40	1.53	1.66	1.89	2.11	2.77	3.42	4.07	4.72
2.6	1.12	1.17	1.22	1.26	1.30	1.35	1.40	1.54	1.68	1.92	2.16	2.97	3.78	4.59	5.41
2.8	1.11	1.16	1.21	1.25	1.30	1.36	1.42	1.57	1.72	1.97	2.22	3.19	4.17	5.20	6.14
3.0	1.10	1.14	1.19	1.24	1.30	1.37	1.44	1.60	1.77	2.03	2.30	3.45	4.62	5.78	6.95
3.2	1.08	1.13	1.18	1.24	1.30	1.38	1.46	1.64	1.83	2.10	2.37				
3.4	1.07	1.12	1.18	1.25	1.32	1.40	1.49	1.69	1.90	2.17	2.45				
3.6	1.06	1.11	1.17	1.25	1.33	1.43	1.53	1.76	2.00	2.27	2.54				
3.8	1.05	1.10	1.16	1.25	1.34	1.45	1.57	1.83	2.10	2.36	2.63				
4.0	1.04	1.10	1.16	1.26	1.36	1.49	1.63	1.93	2.23	2.48	2.73				

1/ Example: If field strip border or barrier is oriented in a north-south direction and the wind direction is  $215^{\circ}$  then the degrees of deviation is  $35^{\circ}$  ( $215 - 180$ )

Table 5 - Field Width Factors

(Multiply distance along wind direction times the field width factor to obtain perpendicular field or strip width)

Preponderance	Degrees of deviation of prevailing wind direction from perpendicular to the field or strip border or barrier 1/														
	0	5	10	15	20	25	30	35	40	45	50	60	70	80	90
1.0	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
1.2	0.64	0.63	0.61	0.60	0.59	0.57	0.56	0.55	0.54	0.53	0.51	0.51	0.50	0.49	0.48
1.4	0.71	0.69	0.68	0.66	0.64	0.62	0.60	0.58	0.55	0.53	0.51	0.49	0.47	0.44	0.43
1.6	0.77	0.74	0.71	0.69	0.68	0.66	0.64	0.60	0.57	0.53	0.50	0.47	0.43	0.40	0.38
1.8	0.81	0.78	0.75	0.72	0.71	0.69	0.67	0.62	0.58	0.53	0.49	0.44	0.40	0.36	0.33
2.0	0.84	0.80	0.77	0.75	0.74	0.71	0.69	0.64	0.59	0.53	0.49	0.41	0.36	0.32	0.28
2.2	0.86	0.82	0.79	0.77	0.75	0.72	0.70	0.64	0.59	0.53	0.48	0.39	0.32	0.28	0.25
2.4	0.88	0.84	0.80	0.78	0.76	0.73	0.71	0.65	0.60	0.52	0.47	0.36	0.29	0.25	0.21
2.6	0.89	0.85	0.81	0.79	0.76	0.74	0.71	0.64	0.59	0.52	0.46	0.34	0.26	0.22	0.18
2.8	0.90	0.86	0.82	0.80	0.76	0.73	0.70	0.63	0.58	0.50	0.45	0.31	0.24	0.19	0.16
3.0	0.90	0.87	0.84	0.80	0.76	0.72	0.69	0.62	0.56	0.49	0.43	0.29	0.22	0.17	0.14
3.2	0.92	0.88	0.84	0.80	0.76	0.72	0.68	0.60	0.54	0.47	0.42				
3.4	0.93	0.89	0.84	0.80	0.75	0.71	0.67	0.59	0.52	0.46	0.40				
3.6	0.94	0.90	0.85	0.80	0.75	0.69	0.65	0.56	0.50	0.44	0.39				
3.8	0.95	0.90	0.86	0.80	0.74	0.68	0.63	0.54	0.47	0.42	0.38				
4.0	0.96	0.90	0.86	0.79	0.73	0.67	0.61	0.51	0.44	0.40	0.36				

1/ Example: If field strip border or barrier is oriented in a north-south direction and the wind direction is  $215^{\circ}$ , then the degrees of deviation is 35 ( $215^{\circ} - 180^{\circ} = 35^{\circ}$ ).

TABLE 6

"V" - VEGETATIVE COVER

Use the following estimates for completing this section of the Wind Erosion Equation:

<u>POUNDS OF RESIDUE PER BUSHEL YIELD PER ACRE</u>					
Grain Corn	-	70 Pounds	Barley	-	65 Pounds
Wheat	-	85 "	Oats	-	55 "
Rye	-	90 "	Soybeans	-	80 "

For Corn Silage use the following weights:

<u>MANAGEMENT LEVEL</u>	<u>POUNDS OF RESIDUES PER ACRE</u>
Low	250
Medium	375
High	500

GUIDES FOR ESTIMATING REDUCTION IN CROP RESIDUE LEFT ON THE SOIL SURFACE AFTER EACH TRIP OR PASS OVER THE LAND:

1. Moldboard plow	Up to 100% reduction	
2. Offset disk - 24 inch blades (6-7 inches deep)	" 75%	"
3. Chisel plow with twisted shanks	" 75%	"
4. Rotary tillage 6 inches deep	" 75%	"
5. Rotary tillage 3 inches deep	" 50%	"
6. Tandem disk	" 50%	"
7. Field cultivator (with sweeps)	" 30%	"
8. Chisel plow (points)	" 20%	"

Assume a field has 6,000 pounds of residue on the soil surface from a 107 bu/ac yield of corn. If it is chisel plowed with straight chisels, the residue is reduced by 20%, leaving 4,800 pounds of residue on the surface. Assume it is then disked once with a tandem disk in preparation for planting. The 4,800 pounds of residue will be reduced by 50% leaving 2,400 pounds on the surface.

TABLE 7. Estimated Crop Tolerances to Soil Loss (Blowing)

<u>Crop</u>	<u>Estimated Crop Tolerance 1/</u>
	<u>T/A/Yr.</u>
1. Corn	2.0
2. Wheat	2/
3. Oats	2/
4. Barley	2/
5. Rye	2/
6. Buckwheat	2/
7. Soybeans	1.0
8. Irish Potatoes	1.0
9. Sweet Potatoes	1.0
10. Asparagus	1.0
11. Snap Beans	0.5
12. Lima Beans	0.5
13. Table Beets	0.0
14. Broccoli	1.0
15. Cabbage	1.0
16. Carrots	0.0
17. Sweet Corn	2.0
18. Cucumbers	0.0
19. Lettuce and romaine	0.0
20. Onions	0.0
21. Green Peas	0.5
22. Sweet Peppers	1.0
23. Spinach	0.0
24. Squash	0.0
25. Tomatoes	0.5
26. Egg Plant	1.0

1/ Crop tolerance values are expressed as T/A/Yr., while soil loss tolerances are expressed as average T/A/Yr. for the cropping sequence. Therefore, when designing a system for protection of a specific crop, the system should be designed to prevent the soil loss from exceeding the crop tolerance the year after the crop is grown. Note that values are estimates.

2/ Will probably tolerate soil blowing equal to or greater than the tolerable soil loss.